NOTICE

All drawings located at the end of the document.

Draft Industrial Area Sampling and Analysis Plan Addendum #IA-04-01 IHSS Group 400-2 (UBC 440 – Modification Center)

October 2003

Draft Industrial Area Sampling and Analysis Plan Addendum #IA-04-01 IHSS Group 400-2 (UBC 440 – Modification Center)

oval received from the Colorado Department of Health and Environment

( )

Approval letter contained in the Administrative Record

October 2003

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ACRONYMS

AL	Action Level
FY	fiscal year
DOE	Department of Energy
HPGe	high-purity germanium
HRR	Historical Release Report
IA	Industrial Area
IASAP	Industrial Area Sampling and Analysis Plan
IHSS	Individual Hazardous Substance Site
MDL	Method Detection Limit
PAC	Potential Area of Concern
pCi/g	Picocurie per gram
PCOC	potential contaminant of concern
RFCA	Rocky Flats Cleanup Agreement
SAP	Sampling and Analysis Plan
UBC	Under Building Contamination
VOC	volatile organic compound
WRW	Wildlife Refuge Worker

1.0 INTRODUCTION

This Industrial Area (IA) Sampling and Analysis Plan (SAP) (IASAP) (DOE 2001) Addendum #IA-04-01 includes Individual Hazardous Substance Site (IHSS) Group-specific information, sampling locations, and potential contaminants of concern (PCOCs) for IHSSs, Potential Areas of Concern (PACs), and Under Building Contamination (UBC) Sites proposed for characterization during Fiscal Year (FY) 04. This IASAP Addendum is a supplement to the IASAP (DOE 2001) and includes data and proposed sampling locations for the IHSS Group 400-2. IHSS Group 400-2 consists of one UBC site: UBC 440 – Modification Center. The location of the UBC Site proposed for IHSS Group 400-2 is shown on Figure 1.

2.0 EXISTING CHARACTERIZATION INFORMATION

Existing concentrations and activities above the method detection limit (MDL) or background means plus two standard deviations are presented on Figure 2. Existing data for this UBC site are available in Appendix C of the IASAP (DOE 2001) and the Historical Release Report (HRR) (DOE 1992-2002). Table 1 presents the PCOCs and proposed sampling methodology.

No Rocky Flats Cleanup Agreement (RFCA) Wildlife Refuge Worker (WRW) Action Level (AL) (DOE et al. 2003) or Ecological AL exceedances were observed at IHSS Group 400-2. However, metals and radionuclides at several locations exceed corresponding background means plus two standard deviations in surface soil and subsurface soil (Figure 2). The following metals and radionuclides were reported: arsenic, copper, cobalt, manganese, americium-241, plutonium-239/240, and total uranium.

Table 1
IHSS Group 400-2 Potential Contaminants of Concern

IHSS Group	IHSS/PAC/UBC Site	PCOCs	Media	Data Source	Sampling Location Method
400-2	UBC 440 – Modification Center	Radionuclides Metals VOCs	Surface Soil and Subsurface Soil	HRR (DOE 1992-2002) Process knowledge (IASAP [DOE 2001])	Statistical and Biased Grid

VOCs - Volatile Organic Compounds

3.0 SAMPLING

The proposed sampling specifications (number and types of samples) for UBC Site 440 are listed in Table 2 and shown on Figure 3. Proposed new sampling locations are the starting point for IHSS Group characterization. After characterization sampling begins, the number and type of samples may be modified based on sampling results. Statistical sampling locations within a building footprint may be adjusted in the field to collect samples from specific building features. Changes to sampling specifications will be considered in consultation with the regulatory agencies.

Three types of sampling strategies are used to determine sampling locations: geostatistical, statistical, and biased. Statistical and biased methods were used to determine sampling locations for this IA SAP Addendum. The statistical grid has computer-generated random starting points and orientations and employs a 72-feet grid space interval. To supplement the statistical grid sampling locations, bias sampling locations were included to characterize locations near drain spouts. The UBC 440 sampling summary is presented in Table 3.

4.0 REFERENCES

DOE, 1992 – 2002, Historical Release Reports for the Rocky Flats Plant, Golden, Colorado.

DOE, 2001, Industrial Area Sampling and Analysis Plan, Rocky Flats Environmental Technology Site, Golden, Colorado, June.

DOE, CDPHE, and EPA, 2003, Proposed Modifications to the Rocky Flats Cleanup Agreement, Rocky Flats Environmental Technology Site, Golden, Colorado, April.

Table 2
UBC Site 440 Sampling Specifications

IHSS Group	IHSS/PAC/ UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	Onsite Laboratory Method	Offsite Laboratory Method	Comments
400-2	UBC 440	BW34-002A	2082104.6	748296.4	Surface Soil	0'-0.5'	Metals	N/A	6010	Statistical grid
		BW34-002A	2082104.6	748296.4	Surface Soil	0'-0.5'	Radionuclides	HPGe	Alpha Spec	Statistical grid
		BW34-002A	2082104.6	748296.4	Surface Soil	0'-0.5'	VOCs	8260	8260	Statistical grid
		BW34-002B	2082104.6	748296.4	Subsurface Soil	0.5'-2.5'	Metals	N/A	6010	Statistical grid
		BW34-002B	2082104.6	748296.4	Subsurface Soil	0.5'-2.5'	Radionuclides	HPGe	Alpha Spec	Statistical grid
		BW34-002B	2082104.6	748296.4	Subsurface Soil	0.5'-2.5'	VOCs	8260	8260	Statistical grid
		BW34-003A	2082071.9	748232.27	Surface Soil	0'-0.5'	Metals	N/A	6010	Statistical grid
		BW34-003A	2082071.9	748232.27	Surface Soil	0'-0.5'	Radionuclides	HPGe	Alpha Spec	Statistical grid
		BW34-003A	2082071.9	748232.27	Surface Soil	0'-0.5'	VOCs	8260	8260	Statistical grid
		BW34-003B	2082071.9	748232.27	Subsurface Soil	0.5'-2.5'	Metals	N/A	6010	Statistical grid
		BW34-003B	2082071.9	748232.27	Subsurface Soil	0.5'-2.5'	Radionuclides	HPGe	Alpha Spec	Statistical grid
		BW34-003B	2082071.9	748232.27	Subsurface Soil	0.5'-2.5'	VOCs	8260	8260	Statistical grid
		BW34-005A	2082065.5	748356.81	Surface Soil	0'-0.5'	Metals	N/A	6010	Statistical grid
		BW34-005A	2082065.5	748356.81	Surface Soil	0'-0.5'	Radionuclides	HPGe	Alpha Spec	Statistical grid
		BW34-005A	2082065.5	748356.81	Surface Soil	0'-0.5'	VOCs	8260	8260	Statistical grid
		BW34-005B	2082065.5	748356.81	Subsurface Soil	0.5'-2.5'	Metals	N/A	6010	Statistical grid
		BW34-005B	2082065.5	748356.81	Subsurface Soil	0.5'-2.5'	Radionuclides	HPGe	Alpha Spec	Statistical grid
		BW34-005B	2082065.5	748356.81	Subsurface Soil	0.5'-2.5'	VOCs	8260	8260	Statistical grid
		BW34-006A	2082032.7	748292.68	Surface Soil	0'-0.5'	Metals	N/A	6010	Statistical grid
		BW34-006A	2082032.7	748292.68	Surface Soil	0'-0.5'	Radionuclides	HPGe	Alpha Spec	Statistical grid
		BW34-006A	2082032.7	748292.68	Surface Soil	0'-0.5'	VOCs	8260	8260	Statistical grid
		BW34-006B	2082032.7	748292.68	Subsurface Soil	0.5'-2.5'	Metals	N/A	6010	Statistical grid
		BW34-006B	2082032.7	748292.68	Subsurface Soil	0.5'-2.5'	Radionuclides	HPGe	Alpha Spec	Statistical grid
		BW34-006B	2082032.7	748292.68	Subsurface Soil	0.5'-2.5'	VOCs	8260	8260	Statistical grid
		BW34-007A	2082000	748228.54	Surface Soil	0'-0.5'	Metals	N/A	6010	Statistical grid
		BW34-007A	2082000	748228.54	Surface Soil	0'-0.5'	Radionuclides	HPGe	Alpha Spec	Statistical grid
		BW34-007A	2082000	748228.54	Surface Soil	0'-0.5'	VOCs	8260	8260	Statistical grid
		BW34-007B	2082000	748228.54	Subsurface Soil	0.5'-2.5'	Metals	N/A	6010	Statistical grid
		BW34-007B	2082000	748228.54	Subsurface Soil	0.5'-2.5'	Radionuclides	HPGe	Alpha Spec	Statistical grid

IHSS Group	IHSS/PAC/ UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	Onsite Laboratory Method	Offsite Laboratory Method	Comments
		BW34-007B	2082000	748228.54	Subsurface Soil	0.5'-2.5'	VOCs	8260	8260	Statistical grid
		BW34-008A	2081993.6	748353.08	Surface Soil	0'-0.5'	Metals	N/A	6010	Statistical grid
		BW34-008A	2081993.6	748353.08	Surface Soil	0'-0.5'	Radionuclides	HPGe	Alpha Spec	Statistical grid
		BW34-008A	2081993.6	748353.08	Surface Soil	0'-0.5'	VOCs	8260	8260	Statistical grid
		BW34-008B	2081993.6	748353.08	Subsurface Soil	0.5'-2.5'	Metals	N/A	6010	Statistical grid
		BW34-008B	2081993.6	748353.08	Subsurface Soil	0.5'-2.5'	Radionuclides	HPGe	Alpha Spec	Statistical grid
		BW34-008B	2081993.6	748353.08	Subsurface Soil	0.5'-2.5'	VOCs	8260	8260	Statistical grid
		BW34-009A	2081960.8	748288.95	Surface Soil	0'-0.5'	Metals	N/A	6010	Statistical grid
		BW34-009A	2081960.8	748288.95	Surface Soil	0'-0.5'	Radionuclides	HPGe	Alpha Spec	Statistical grid
		BW34-009A	2081960.8	748288.95	Surface Soil	0'-0.5'	VOCs	8260	8260	Statistical grid
		BW34-009B	2081960.8	748288.95	Subsurface Soil	0.5'-2.5'	Metals	N/A	6010	Statistical grid
		BW34-009B	2081960.8	748288.95	Subsurface Soil	0.5'-2.5'	Radionuclides	HPGe	Alpha Spec	Statistical grid
		BW34-009B	2081960.8	748288.95	Subsurface Soil	0.5'-2.5'	VOCs	8260	8260	Statistical grid
		BW34-014A	2081943.5	748211.81	Surface Soil	0'-0.5'	Metals	N/A	6010	Bias sample – drain outfall
		BW34-014A	2081943.5	748211.81	Surface Soil	0'-0.5'	Radionuclides	HPGe	Alpha Spec	Bias sample – drain outfall
		BW34-014A	2081943.5	748211.81	Surface Soil	0'-0.5'	VOCs	8260	8260	Bias sample – drain outfall
		BW34-014B	2081943.5	748211.81	Subsurface Soil	0.5'-2.5'	Metals	N/A	6010	Bias sample – drain outfall
		BW34-014B	2081943.5	748211.81	Subsurface Soil	0.5'-2.5'	Radionuclides	HPGe	Alpha Spec	Bias sample – drain outfall
		BW34-014B	2081943.5	748211.81	Subsurface Soil	0.5'-2.5'	VOCs	8260	8260	Bias sample – drain outfall
		BW34-015A	2082007	748214.25	Surface Soil	0'-0.5'	Metals	N/A	6010	Bias sample – drain outfall
		BW34-015A	2082007	748214.25	Surface Soil	0'-0.5'	Radionuclides	HPGe	Alpha Spec	Bias sample – drain outfall
		BW34-015A	2082007	748214.25	Surface Soil	0'-0.5'	VOCs	8260	8260	Bias sample – drain outfall
		BW34-015B	2082007	748214.25	Subsurface Soil	0.5'-2.5'	Metals	N/A	6010	Bias sample – drain outfall
		BW34-015B	2082007	748214.25	Subsurface Soil	0.5'-2.5'	Radionuclides	HPGe	Alpha Spec	Bias sample – drain outfall
		BW34-015B	2082007	748214.25	Subsurface Soil	0.5'-2.5'	VOCs	8260	8260	Bias sample – drain outfall
		BW34-016A	2082077.8	748214.25	Surface Soil	0'-0.5'	Metals	N/A	6010	Bias sample – drain outfall
		BW34-016A	2082077.8	748214.25	Surface Soil	0'-0.5'	Radionuclides	HPGe	Alpha Spec	Bias sample – drain outfall
		BW34-016A	2082077.8	748214.25	Surface Soil	0'-0.5'	VOCs	8260	8260	Bias sample – drain outfall
		BW34-016B	2082077.8	748214.25	Subsurface Soil	0.5'-2.5'	Metals	N/A	6010	Bias sample – drain outfall
		BW34-016B	2082077.8	748214.25	Subsurface Soil	0.5'-2.5'	Radionuclides	HPGe	Alpha Spec	Bias sample – drain outfall
		BW34-016B	2082077.8	748214.25	Subsurface Soil	0.5'-2.5'	VOCs	8260	8260	Bias sample – drain outfall
		BW34-017A	2082093.6	748214.86	Surface Soil	0'-0.5'	Metals	N/A	6010	Bias sample – drain outfall

IHSS Group	IHSS/PAC/ UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	Onsite Laboratory Method	Offsite Laboratory Method	Comments
		BW34-017A	2082093.6	748214.86	Surface Soil	0'-0.5'	Radionuclides	HPGe	Alpha Spec	Bias sample – drain outfall
		BW34-017A	2082093.6	748214.86	Surface Soil	0'-0.5'	VOCs	8260	8260	Bias sample – drain outfall
		BW34-017B	2082093.6	748214.86	Subsurface Soil	0.5'-2.5'	Metals	N/A	6010	Bias sample – drain outfall
		BW34-017B	2082093.6	748214.86	Subsurface Soil	0.5'-2.5'	Radionuclides	HPGe	Alpha Spec	Bias sample – drain outfall
		BW34-017B	2082093.6	748214.86	Subsurface Soil	0.5'-2.5'	VOCs	8260	8260	Bias sample – drain outfall
		BW35-040A	2082132.1	748365.59	Surface Soil	0'-0.5'	Metals	N/A	6010	Bias sample – drain outfall
		BW35-040A	2082132.1	748365.59	Surface Soil	0'-0.5'	Radionuclides	HPGe	Alpha Spec	Bias sample – drain outfall
		BW35-040A	2082132.1	748365.59	Surface Soil	0'-0.5'	VOCs	8260	8260	Bias sample – drain outfall
		BW35-040B	2082132.1	748365.59	Subsurface Soil	0.5'-2.5'	Metals	N/A	6010	Bias sample – drain outfall
		BW35-040B	2082132.1	748365.59	Subsurface Soil	0.5'-2.5'	Radionuclides	HPGe	Alpha Spec	Bias sample – drain outfall
		BW35-040B	2082132.1	748365.59	Subsurface Soil	0.5'-2.5'	VOCs	8260	8260	Bias sample – drain outfall
		BW35-041A	2082054	748364.98	Surface Soil	0'-0.5'	Metals	N/A	6010	Bias sample – drain outfall
		BW35-041A	2082054	748364.98	Surface Soil	0'-0.5'	Radionuclides	HPGe	Alpha Spec	Bias sample – drain outfall
		BW35-041A	2082054	748364.98	Surface Soil	0'-0.5'	VOCs	8260	8260	Bias sample – drain outfall
		BW35-041B	2082054	748364.98	Subsurface Soil	0.5'-2.5'	Metals	N/A	6010	Bias sample – drain outfall
		BW35-041B	2082054	748364.98	Subsurface Soil	0.5'-2.5'	Radionuclides	HPGe	Alpha Spec	Bias sample – drain outfall
		BW35-041B	2082054	748364.98	Subsurface Soil	0.5'-2.5'	VOCs	8260	8260	Bias sample – drain outfall
		BW35-042A	2081943.5	748364.98	Surface Soil	0'-0.5'	Metals	N/A	6010	Bias sample – drain outfall
		BW35-042A	2081943.5	748364.98	Surface Soil	0'-0.5'	Radionuclides	HPGe	Alpha Spec	Bias sample – drain outfall
		BW35-042A	2081943.5	748364.98	Surface Soil	0'-0.5'	VOCs	8260	8260	Bias sample – drain outfall
		BW35-042B	2081943.5	748364.98	Subsurface Soil	0.5'-2.5'	Metals	N/A	6010	Bias sample – drain outfall
		BW35-042B	2081943.5	748364.98	Subsurface Soil	0.5'-2.5'	Radionuclides	HPGe	Alpha Spec	Bias sample – drain outfall
		BW35-042B	2081943.5	748364.98	Subsurface Soil	0.5'-2.5'	VOCs	8260	8260	Bias sample – drain outfall
		BX34-002A	2082215.7	748239.72	Surface Soil	0'-0.5'	Metals	N/A	6010	Statistical grid
		BX34-002A	2082215.7	748239.72	Surface Soil	0'-0.5'	Radionuclides	HPGe	Alpha Spec	Statistical grid
		BX34-002A	2082215.7	748239.72	Surface Soil	0'-0.5'	VOCs	8260	8260	Statistical grid
		BX34-002B	2082215.7	748239.72	Subsurface Soil	0.5'-2.5'	Metals	N/A	6010	Statistical grid
		BX34-002B	2082215.7	748239.72	Subsurface Soil	0.5'-2.5'	Radionuclides	HPGe	Alpha Spec	Statistical grid
		BX34-002B	2082215.7	748239.72	Subsurface Soil	0.5'-2.5'	VOCs	8260	8260	Statistical grid
		BX34-004A	2082176.5	748300.13	Surface Soil	0'-0.5'	Metals	N/A	6010	Statistical grid
		BX34-004A	2082176.5	748300.13	Surface Soil	0'-0.5'	Radionuclides	HPGe	Alpha Spec	Statistical grid
		BX34-004A	2082176.5	748300.13	Surface Soil	0'-0.5'	VOCs	8260	8260	Statistical grid

IHSS Group	IHSS/PAC/ UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	Onsite Laboratory Method	Offsite Laboratory Method	Comments
		BX34-004B	2082176.5	748300.13	Subsurface Soil	0.5'-2.5'	Metals	N/A	6010	Statistical grid
		BX34-004B	2082176.5	748300.13	Subsurface Soil	0.5'-2.5'	Radionuclides	HPGe	Alpha Spec	Statistical grid
		BX34-004B	2082176.5	748300.13	Subsurface Soil	0.5'-2.5'	VOCs	8260	8260	Statistical grid
		BX34-005A	2082143.8	748235.99	Surface Soil	0'-0.5'	Metals	N/A	6010	Statistical grid
		BX34-005A	2082143.8	748235.99	Surface Soil	0'-0.5'	Radionuclides	HPGe	Alpha Spec	Statistical grid
		BX34-005A	2082143.8	748235.99	Surface Soil	0'-0.5'	VOCs	8260	8260	Statistical grid
		BX34-005B	2082143.8	748235.99	Subsurface Soil	0.5'-2.5'	Metals	N/A	6010	Statistical grid
		BX34-005B	2082143.8	748235.99	Subsurface Soil	0.5'-2.5'	Radionuclides	HPGe	Alpha Spec	Statistical grid
		BX34-005B	2082143.8	748235.99	Subsurface Soil	0.5'-2.5'	VOCs	8260	8260	Statistical grid
		BX34-006A	2082137.4	748360.54	Surface Soil	0'-0.5'	Metals	N/A	6010	Statistical grid
		BX34-006A	2082137.4	748360.54	Surface Soil	0'-0.5'	Radionuclides	HPGe	Alpha Spec	Statistical grid
		BX34-006A	2082137.4	748360.54	Surface Soil	0'-0.5'	VOCs	8260	8260	Statistical grid
		BX34-006B	2082137.4	748360.54	Subsurface Soil	0.5'-2.5'	Metals	N/A	6010	Statistical grid
		BX34-006B	2082137.4	748360.54	Subsurface Soil	0.5'-2.5'	Radionuclides	HPGe	Alpha Spec	Statistical grid
		BX34-006B	2082137.4	748360.54	Subsurface Soil	0.5'-2.5'	VOCs	8260	8260	Statistical grid
		BX34-008A	2082210.8	748216.69	Surface Soil	0'-0.5'	Metals	N/A	6010	Bias sample – drain outfall
		BX34-008A	2082210.8	748216.69	Surface Soil	0'-0.5'	Radionuclides	HPGe	Alpha Spec	Bias sample – drain outfall
		BX34-008A	2082210.8	748216.69	Surface Soil	0'-0.5'	VOCs	8260	8260	Bias sample – drain outfall
		BX34-008B	2082210.8	748216.69	Subsurface Soil	0.5'-2.5'	Metals	N/A	6010	Bias sample – drain outfall
		BX34-008B	2082210.8	748216.69	Subsurface Soil	0.5'-2.5'	Radionuclides	HPGe	Alpha Spec	Bias sample – drain outfall
		BX34-008B	2082210.8	748216.69	Subsurface Soil	0.5'-2.5'	VOCs	8260	8260	Bias sample – drain outfall
		BX35-027A	2082209.3	748364.26	Surface Soil	0'-0.5'	Metals	N/A	6010	Statistical grid
		BX35-027A	2082209.3	748364.26	Surface Soil	0'-0.5'	Radionuclides	HPGe	Alpha Spec	Statistical grid
		BX35-027A	2082209.3	748364.26	Surface Soil	0'-0.5'	VOCs	8260	8260	Statistical grid
		BX35-027B	2082209.3	748364.26	Subsurface Soil	0.5'-2.5'	Metals	N/A	6010	Statistical grid
		BX35-027B	2082209.3	748364.26	Subsurface Soil	0.5'-2.5'	Radionuclides	HPGe	Alpha Spec	Statistical grid
		BX35-027B	2082209.3	748364.26	Subsurface Soil	0.5'-2.5'	VOCs	8260	8260	Statistical grid

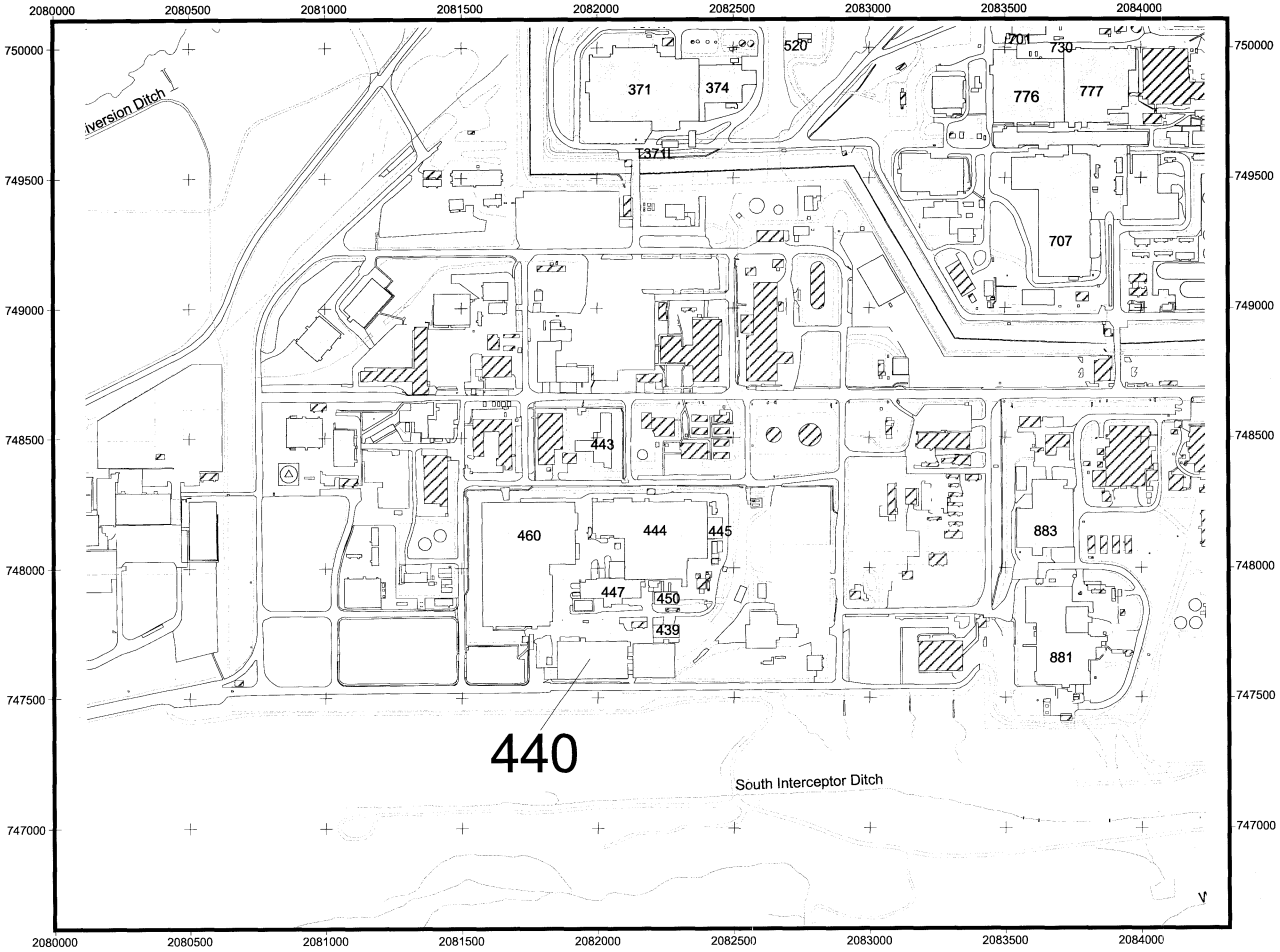
Table 3
UBC Site 440 Sampling Summary

Category	Total
Number of Sampling Locations	20
Number of Samples	40
Number of Radionuclide Analyses	40
Number of Metal Analyses	40
Number of VOC Analyses	40

14

Figure 1

IHISS Group 400-2 Location Map



KEY

- UBC Site
- Demolished Structure
- Structure
- Paved area
- Dirt road
- Stream, ditch, or other drainage

N

200 0 200 400 Feet

Scale = 1 : 6,000

State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD 27

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by:

RADMS

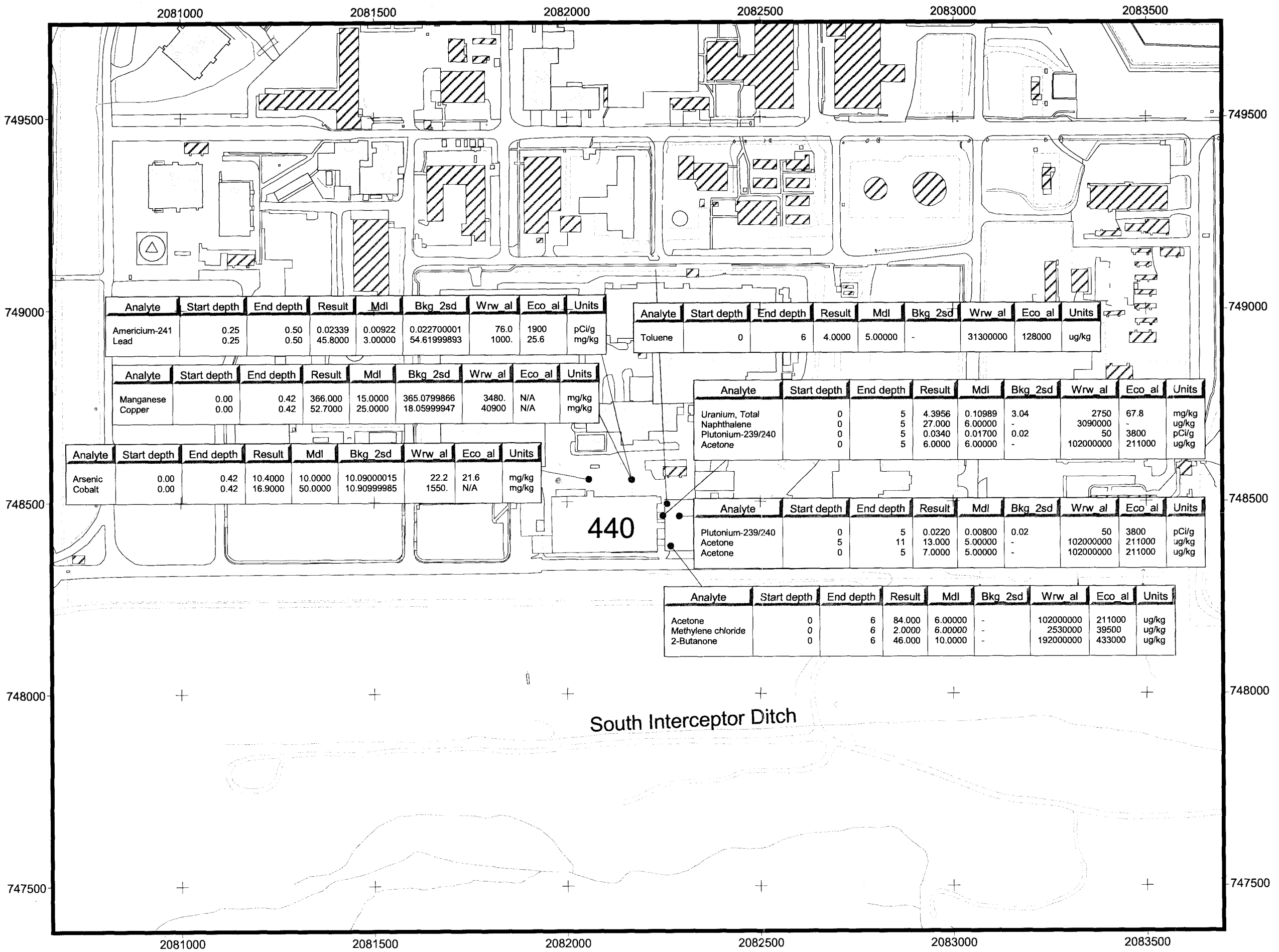
Prepared for:

KAISER•HILL COMPANY

400-2char_gpp_10_03.apr October 2003

Figure 2

UBC 440 Existing Surface and Subsurface Soil Sampling Results Greater Than MDLs or Background Means Plus Two Standard Deviations



Analyte	Start depth	End depth	Result	Mdl	Bkg_2sd	Wrw_al	Eco_al	Units
Americium-241	0.25	0.50	0.02339	0.00922	0.022700001	76.0	1900	pCi/g
Lead	0.25	0.50	45.8000	3.00000	54.61999893	1000.	25.6	mg/kg

Analyte	Start depth	End depth	Result	Mdl	Bkg_2sd	Wrw_al	Eco_al	Units
Toluene	0	6	4.0000	5.00000	-	31300000	128000	ug/kg

Analyte	Start depth	End depth	Result	Mdl	Bkg_2sd	Wrw_al	Eco_al	Units
Manganese	0.00	0.42	366.000	15.0000	365.0799866	3480.	N/A	mg/kg
Copper	0.00	0.42	52.7000	25.0000	18.05999947	40900	N/A	mg/kg

Analyte	Start depth	End depth	Result	Mdl	Bkg_2sd	Wrw_al	Eco_al	Units
Uranium, Total	0	5	4.3956	0.10989	3.04	2750	67.8	mg/kg
Naphthalene	0	5	27.000	6.00000	-	3090000	-	ug/kg
Plutonium-239/240	0	5	0.0340	0.01700	0.02	50	3800	pCi/g
Acetone	0	5	6.0000	6.00000	-	102000000	211000	ug/kg

Analyte	Start depth	End depth	Result	Mdl	Bkg_2sd	Wrw_al	Eco_al	Units
Arsenic	0.00	0.42	10.4000	10.0000	10.09000015	22.2	21.6	mg/kg
Cobalt	0.00	0.42	16.9000	50.0000	10.90999985	1550.	N/A	mg/kg

Analyte	Start depth	End depth	Result	Mdl	Bkg_2sd	Wrw_al	Eco_al	Units
Plutonium-239/240	0	5	0.0220	0.00800	0.02	50	3800	pCi/g
Acetone	5	11	13.000	5.00000	-	102000000	211000	ug/kg
Acetone	0	5	7.0000	5.00000	-	102000000	211000	ug/kg

Analyte	Start depth	End depth	Result	Mdl	Bkg_2sd	Wrw_al	Eco_al	Units
Acetone	0	6	84.000	6.00000	-	102000000	211000	ug/kg
Methylene chloride	0	6	2.0000	6.00000	-	2530000	39500	ug/kg
2-Butanone	0	6	46.000	10.0000	-	192000000	433000	ug/kg

KEY

- UBC Site
- Demolished Structure
- Structure
- Paved area
- Dirt road
- Stream, ditch, or other drainage
- Soil (surface and subsurface) sampling location greater than background means plus two standard deviations or MDLs
- Sampling location

N

100 0 100 200 Feet

Scale = 1:3,000

State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD 27

U.S. Department of Energy
Rocky Flats Environmental Technology Site

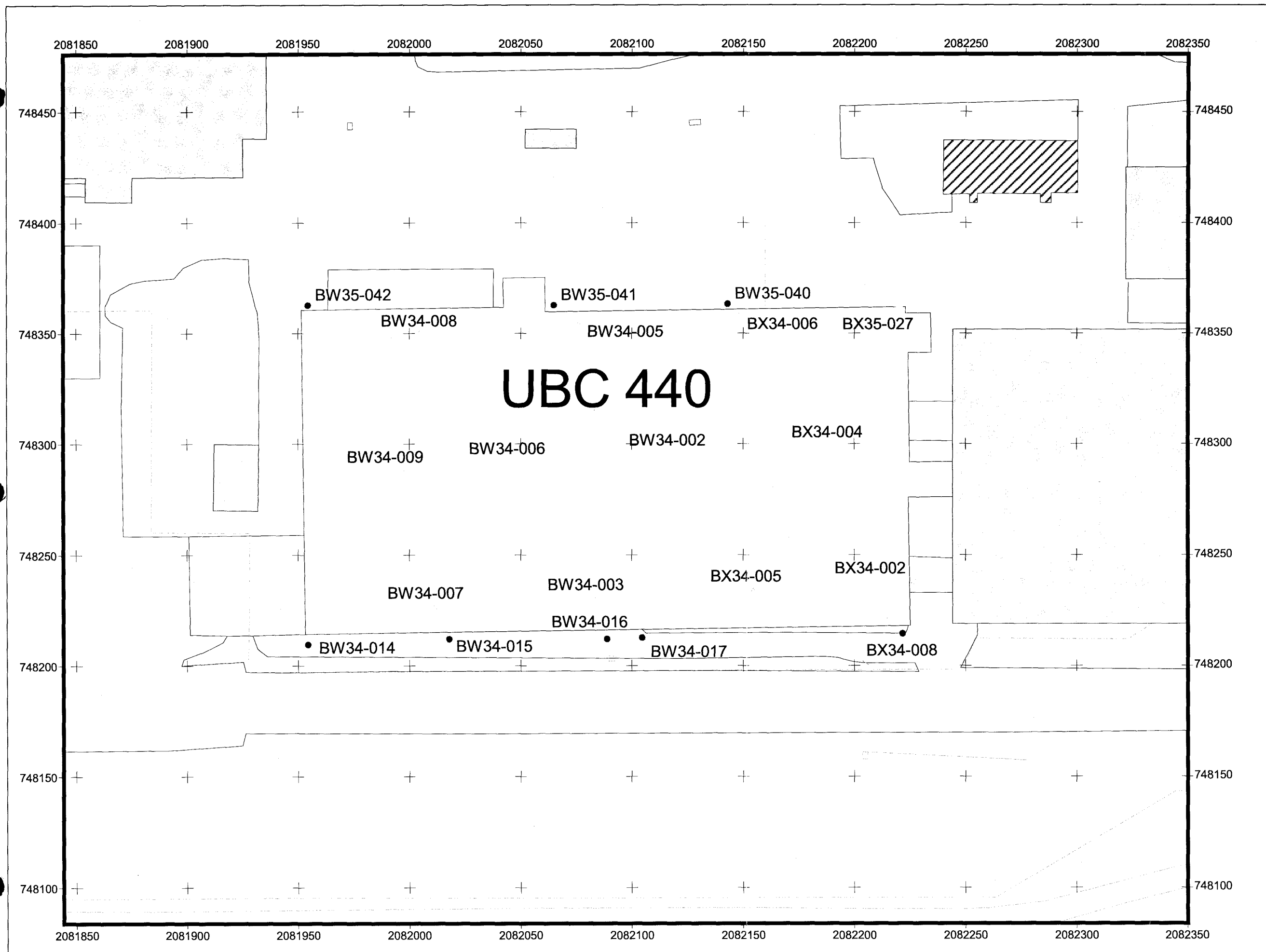
Prepared by:
RADMS

Prepared for:
KAISER•HILL COMPANY

400-2char_gpp_10_03.apr October 2003

Figure 3

IHSS Group 400-2
Proposed Sampling Locations for UBC 440



KEY

- Biased sampling location
- Statistical sampling location
- UBC Site
- Demolished Structure
- Structure
- Paved area
- Dirt road
- Stream, ditch, or other drainage

N

100 0 100 200 Feet

Scale = 1:500

State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD 27

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by:

RADMS

Prepared for:

KAISER•HILL COMPANY

400-2char_gpp_10_03.apr October 2003